SECTION A

REGULATION AND POLICY

Legislative Authority/Lead Agency(ies)

The EMS lead agency role in California is shared between the State Emergency Medical Services Authority and the local EMSA (LEMSA). The EMSA develops regulations/guidelines whereas the LEMSAs implement them at the local level. The LEMSAs function as an extension of the state lead agency.

Legislative authority for California's emergency medical services systems is Health and Safety Code, Division 2.5. The EMS Act became law in 1980. It created a state lead agency, the EMS Authority (EMSA) to:

- Develop EMS planning and implementation guidelines
- Promulgate regulations
- Evaluate local EMS systems
- Coordinate statewide EMS disaster response
- Provide technical assistance to local agencies
- License and discipline paramedics (1990)
- Work with an EMS Commission which is advisory to the EMSA but has approval authority for all EMSA regulations

Authority for implementing the standards and regulations promulgated by the EMSA is the responsibility of the local EMS agency (LEMSA). Each California county designates its local EMS agency. Twenty five (25) LEMSAs are single-county agencies; 7 are regional LEMSAs serving three or more counties. LEMSAs:

- Plan, implement, and evaluate the local emergency medical services system;
- Develop and implement local policies and procedures for all facets of the local EMS system;
- Responsible for prospective, immediate, retrospective medical control;
- Authorize and monitor training programs for prehospital personnel;
- Certify and discipline EMTs;
- Designate specialty care centers (trauma, pediatric critical care);
- May award exclusive operating rights for emergency ambulance service using a competitive process conducted at periodic intervals.

There is variation among LEMSAs related to functions which are not mandated in law.

- The LEMSAs that award exclusive operating area rights to ambulance providers often develop detailed performance-based contracts requiring monitoring for compliance.

- Many LEMSAs are responsible for medical/health response to disaster in their service areas. Others do not assume this role.

Some sections of the EMS Act have been interpreted differently by counties, cities, and providers. In particular, there has been disagreement between cities and counties regarding LEMSA authority for administrative control of local EMS systems and services. Numerous lawsuits pitting cities against counties have resulted. Two such cases were eventually heard by the California Supreme Court. The Court's decisions supported the county position as the controlling level of government and have largely resolved the matter.

Overall, there is no clearly established statewide coordination of most services (such as trauma). At best, this is dealt with informally by LEMSA's within their geographical regions. However, one area where statewide coordination is strong is in disaster response with the regional disaster medical/health coordinator system and coordination by Governor's Office of Emergency Services.

The EMSA lacks staff with "hands-on" EMS experience. Only one current staff member had EMS experience prior to employment with the Agency. LEMSAs provide substantial technical assistance to the EMSA.

Operational Policies and Procedures

Operational policies and procedures are developed and implemented by the LEMSAs. Variation in these between local EMS systems has decreased over time due to sharing of "best practices" between systems, effective communications between EMSA, EMS administrators, and EMS medical directors. Developing policies and procedures at the local level offers some advantages:

- They can be modified quickly when needed.
- Local stakeholders can actively participate.
- Allows for variation to adapt to local needs and resources.
- Most LEMSAs use local advisory committees including medical advisory committees and other non-clinical groups.

Funding

There is significant variation in LEMSA funding and it does not appear stable. A table is included which compares the LEMSAs by population served, number of staff, and funding sources by percent of the total LEMSA budget. (Please refer to Table 1.)

- State general funds are available only to regional agencies. The seven agencies represent 33 counties. California has 25 single county agencies. California has 58 counties.

- County general fund (unstable, as they are not earmarked for EMS and can be moved to other programs at county's option). County funding sources are becoming increasingly scarce.

- Benefit assessment – taxpayers in some counties have voted to support their EMS systems with an assessment on property taxes. Unfortunately this source runs out at the end of 2000 for one county which relies on this source for 90% of its budget.

- Fees and fines to providers – ambulance services, base hospitals, trauma centers. As available health care dollars become scarcer this source may no longer be available.

- EMS Fund – Most county's have implemented an EMS Fund which is funded by moving violations and is used to partially compensate physicians and hospitals uncompensated emergency and trauma care. 17% is available for "other EMS purposes." Some counties are very reliant on this funding source for their LEMSA. This is not a stable source of funding because among other reasons traffic fines are decreasing and for other reasons.

- LEMSAs are frequently given unfunded mandates (most recently conducting "system impact evaluations" when a hospital plans to close or downgrade its emergency services).

Recommendations

- A stable, sufficient, and equitable funding source for LEMSAs is critically needed.
- A clear mechanism for statewide coordination of EMS resources is needed.
- The relationship between EMSA and LEMSAs should be strengthened.

SECTION B

RESOURCE MANAGEMENT

Status

California's EMS system is a complex inter-relationship between the EMS Authority, local EMS agencies (county and regional), and resource providers. The EMS Authority serves as the lead agency, developing regulations, standards and guidelines having statewide application; and the local EMS agencies perform the local/regional coordination, identification, and categorization of EMS system and resource information (Section 1797.252, California Health & Safety Code), as well as serving as a technical resource to the EMS Authority and other local EMS agencies. Although California's formal EMS system developed at the county level, and has evolved into a shared governance, the role of the county/regional EMS agencies has remained as the most effective mechanism to coordinate EMS resources within the state.

Coordinating California's 360 Public Safety Answering Points, 2,200 ambulances, 350 receiving facilities, 33,000 Emergency Medical Technicians, 9,000 paramedics presents unique challenges, as does the state's large and diverse population and geography. California's fifty-eight (58) counties, the ten (10) largest of which have a population greater than the states of Delaware, Hawaii, Idaho, Maine, Maryland, Minnesota, Montana, New Mexico, North Dakota, Oregon, Rhode Island, South Dakota, Vermont, and Wyoming combined, generate more than 1.7 million requests for EMS annually.

Resource information is assessed by the local EMS agencies and conveyed to the EMS Authority as part of the statutory requirement to prepare and submit a local EMS Plan (Section 1797.254, California Health & Safety Code). A State EMS plan has not yet been developed; however, a collaborative planning approach has been initiated through the *EMS Vision* process.

The ability to capture reliable data varies widely and has been cited as a significant issue. A statewide EMS information database has been developed; however, information is not uniformly available throughout the state, and what has been produced has been found to have little useful value. The variability of data collection capabilities throughout the state and lack of an effective centralized management information system preclude timely monitoring of resource quantity, quality, distribution or utilization. The lead agency lacks the stable funding and technical resources necessary to coordinate, provide assistance, or implement an effective central statewide data collection system.

EMS personnel recruitment and retention programs are provided almost exclusively through the provider agencies. And while this approach appears successful in urban and metropolitan areas, the ability to recruit and retain qualified personnel in the state's small and rural communities continues to be an issue.

Strengths

- Local EMS agencies provide regular direct contact with the organizations and personnel operating within the local jurisdiction and promote a high degree of constituent involvement in system design and operation.
- Local administration allows for a rapid response to changing resource needs, rapid cycle improvement, and flexibility in system design to address unique needs and issues.
- A lead agency has been established and charged with developing regulations, standards and guidelines having statewide application, providing technical assistance, and facilitating regional and statewide coordination.

- The statewide system design provides a manageable span of control of resources.

Opportunities for Improvement

- Statewide EMS management information system.
- State EMS Plan.
- Technical resource capabilities within the lead agency.
- Recruitment and retention of EMS personnel, particularly in rural or remote communities.
- Stable funding.

Recommendations

- Revise state standards and guidelines for the development of local EMS plan(s).
- Develop a state EMS plan.
- Increase funding for lead agency technical support.
- Develop a statewide data collection system that complies with federal minimum data sets and fund implementation at the local level.
- Assess resource needs in under served areas and complete a needs assessment to determine areas of need, and implement programs to address those needs.
- Develop and implement EMS volunteer personnel recruitment and retention programs which includes provisions for training, education, and distance learning.
- Improve coordination among state agencies having collateral responsibilities within the EMS system.

SECTION C

HUMAN RESOURCES AND TRAINING

Current Status

- LEMSA's approve training programs for pre-hospital personnel within their jurisdiction. Each program is approved by the LEMSA within whose jurisdiction it is based even if it has multiple satellites located in other LEMSA jurisdictions. The EMSA is the approval authority for statewide public safety agencies.

- EMSA sets standards for the training programs through regulations but does not play a role in the actual approval of the training programs.

- Paramedics are required to have 48 hours of continuing education (C.E.) every 2 years in order to be re-licensed.

- EMTs are required to take an a 24 hour refresher course every two years or have 24 hours of continuing education.

- Each LEMSA approves paramedic continuing education providers within its jurisdiction using statewide standards contained in state regulations.

- The EMSA reviews each paramedic's C.E. during the re-licensing process (and may audit on a case-by-case basis).

- There are 26 California paramedic training programs and providers including community colleges, LEMSAs, hospitals, and private post secondary schools.

- There are hundreds of EMT training programs and providers including fire service agencies, community colleges, private post secondary schools, law enforcement agencies, and LEMSAs.

- EMSA is responsible for licensing paramedics and re-licensing them every two years. Paramedics must have completed a standard training program, pass the EMT National Registry exam, and pass a criminal background check. EMSA conducts paramedic licensure disciplinary actions. In order to be re-licensed, the paramedic must show proof of 48 hours of continuing education.

- EMSA maintains a registry of all California paramedics. LEMSAs "accredit" paramedics to practice in the local EMS system. Accreditation requirements are limited to training and testing in local skills not contained in the state basic scope of practice, an orientation to the local EMS system, and an optional "pre-accreditation field evaluation."

- EMTs are certified by a LEMSA, or by a public safety agency that has been authorized to certify EMTs by the LEMSA. Statewide, public safety agency EMTs are certified to practice statewide. EMTs are not required to be certified in the jurisdiction in which they practice.

Strengths

- Standards and curricula for pre-hospital personnel are set in regulations.

- Beginning 2004, all California paramedic training programs are required to be accredited by the Joint Review Committee on Educational Programs for EMT-Paramedic.

- Local oversight of training programs is beneficial.

- There is a statewide association of paramedic training program directors which meets regularly and makes recommendations to EMSA AC and to the EMSA.

- Many LEMSAs have implemented emergency medical dispatcher training and protocols within their jurisdictions.

- State paramedic regulations require each LEMSA, base hospital, and paramedic service provider to have a continuous quality improvement program.

- Specialized training programs such as ACLS, PALS, PHTLS, and PALS are widely available. These programs cannot be required as a condition of paramedic licensure or local accreditation. Many LEMSAs strongly encourage paramedic service providers to have their paramedic employees take these courses.

- Each LEMSA determines EMS manpower needs locally and tries to ensure that the training resources are available.

- Critical Incident Stress Management Teams are in place in most local EMS systems. Some are peer based, some are staffed with mental health professionals. A number of teams combine peers and mental health professionals on the same team.

Opportunities for Improvement

- A number of paramedic training programs have satellite programs in multiple locations outside of the jurisdiction of the LEMSA that approves the program.

- Not all LEMSAs that approve paramedic training programs, or the EMSA, have staff with pre-hospital training expertise.

- There is no legal requirement that dispatchers handling EMS calls receive medical training. (Guidelines for emergency medical dispatcher training have been under development by the EMSA for several years.)
- Some rural areas use an intermediate level of pre-hospital personnel (EMT-II). EMSA regulations exist for this personnel category but are very outdated.

- There is no standard statewide EMT-I certification examination.

- There is no statewide registry of EMT-Is.

- EMSA promulgates regulations for first aid standards for public safety personnel that are not paramedics or EMT-Is but there is no responsible authority for local oversight.

- For the last three years, paramedic training resources, at least in the San Francisco Bay Area, have not been able to keep up with the demand. The increased demand is due to the trend for the fire service to provide paramedic first response.

Recommendations

- Paramedic training programs that offer training in more than one LEMSA jurisdiction should be approved at the state level by paramedic training experts using a standard criteria and evaluation instrument.

- There should be a statewide registry of EMT-Is.
- Update EMT-II regulations if this category of provider continues to be used.
- Implement statewide emergency medical dispatcher regulations.
- Implement a standard EMT-I certification examination.
- Adopt Federal DOT Curriculum.

State Standards and Guidelines (EMSA Publication No. EMSA 101), Section D - Response and Transportation, specifies various transportation provider standards including:

- Mutual aid and jurisdictional issues.
- Response time standards.
- Compliance with equipment and supply standards.
- Minimum personnel training requirements.
- Design and periodic re-evaluation of response zones.
- Classification, dispatching and response of air ambulances and other specialty vehicles.
- Monitoring of transportation providers.

State Standards and Guidelines (EMSA Publication No. EMSA 101), Section H - Disaster Medical Response, specifies various cross-jurisdictional - mutual aid requirements.

CCR 100173 requires agreement between LEMSA and ALS providers, ensuring compliance with federal, state, and local laws, policies, standards, etc.

Inspection and system surveillance occurs at the LEMSA level, normally specified local ordinance, policy and agreements - state oversees LEMSA compliance through plan submission and approval.

Strengths:

Statutory authority for establishment, regulation and monitoring of transportation services, including required contracts, exists.

Proper span of authority is maintained between the State and the LEMSA and, through the LEMSA to the local providers.

State standards and guidelines articulate uniform transportation elements which must be addressed in the LEMSA EMS Plan. State has final approval of LEMSA EMS Plan.

Opportunities for Improvement:

- Public providers retain [perceived] loophole for written agreement requirement (1797.201) which needs to be closed – all providers need to play by the same rules.
- Need to establish a formal State evaluation process over LEMSA – ensure compliance with regulations, standards, etc.
- No standardization for vehicle/provider licensure, inspections, etc., needs to be added to State Publication No. EMSA 101.
- Standards and Guidelines for transport provider zone development are outdated and in need of review and revision.
- Clarification is required with regard to authority for and medical control of interfacility transfers.
- Critical Care Ambulances need to be defined and statutory/regulatory authority clarified.

Recommendations:

- Clarify authority for requirement for written ALS provider agreements (§1797.201) and monitoring of compliance with standards (Vision Recommendation).
- Formalize state review of LEMSA compliance with standards - periodic and complaint-based evaluation process (Vision Recommendation).
- Develop State EMS Plan (Vision Project objective).
- Insert regulatory requirement/authority for unannounced public or private ambulance inspections.
- Develop legislative authority for the management and medical control of interfacility transports, including Critical Care Transport (Vision Recommendation).

SECTION E

FACILITIES

Current Status

LEMSAs develop policies and procedures for the destination of ambulance patients. There is a formal designation procedure for trauma centers and pediatric critical care centers but not for other levels of emergency care.

The State Department of Health Services is responsible for promulgating regulations for hospitals in the State. It also issues optional licenses for emergency departments that are categorized as standby, basic, or comprehensive.

Most emergency departments are in the "basic" category. Few hospitals can qualify as a comprehensive emergency service. Standby facilities were intended to be hospitals in rural/remote areas with physicians on call. However, a new "standby" model is emerging in urban areas where an emergency department is located in a non-acute care hospital with no critical care services.

The EMSA promulgates regulations for trauma centers and base hospitals. There are also state standards for pediatric capabilities for emergency departments, but these are not regulations.

Statute gives the EMSA authority to develop guidelines for hospital critical care capabilities but no guidelines have been promulgated.

Most hospitals actively participate in local EMS planning and policy development processes. LEMSAs have policies and procedures regarding the out-of-hospital emergency medical care triage and ambulance destination based on the patient's medical condition.

The EMS Act gives LEMSAs authority to establish guidelines and standards for completion and operation of formal transfer agreements between hospitals relative to type of patient, initial patient care treatments, requirements of inter-hospital care, and associated logistics for transfer, evaluation, and monitoring of the patient.

There are no state standards for inter-facility transfer or transport. Inter-facility transport providers include EMT staffed ambulances, paramedic staffed ground ambulances, registered nurse staffed critical care transport vehicles, specialty critical care units staffed by centers (e.g., neonatal), air ambulances staffed by registered nurse or registered nurse/paramedic teams.

Strengths

Having ambulance destination and diversion policies developed at the local level enhances accuracy and develops good communications with the facilities and the ambulance providers. These policies take into consideration the level and type of services available at each facility, transport distance, and patient preference. The policies/procedures address stabilization and definitive care.

LEMSAs designate trauma centers and pediatric critical care centers. LEMSAs determine and monitor compliance with transport destination policies.

Opportunities for Improvement

The regulations for hospital emergency departments are old (over 25 years) and outdated. There is no statutory authority for verifying the categorization (on-site review) by the emergency medical services agency other than for designation as a trauma or pediatric specialty care center.

There is no legislation for "designating" burn or spinal cord trauma centers. There are no state standards or regulations regarding inter-facility transfers or transport. It is very difficult for EMS agencies to evaluate emergency departments, specialty care centers (other than trauma centers), or inter-facility transfers due to the lack of legal authority for these activities. In general, most hospitals believe that the LEMSA's authority ends at the door to the emergency department. Data, such as patient outcome data, is difficult to obtain from hospitals.

Staffing specialty physician emergency department call panels is becoming increasing difficult for hospitals. Physicians no longer find this role to be financially rewarding in today's health care economy. Hospital resources have decreased over the last decade due to downsizing, hospital mergers and closures. Ambulance diversion is common due to overloaded emergency departments and/or no available or staffed critical care beds. There is no identified government agency responsible for conducting a community needs assessment to project emergency medical service needs so that the adequacy of resources can be determined.

There is no single lead agency overseeing hospital emergency care resources (DHS, Office of Statewide Health Planning, California Department of Corporations, and EMSA.) Their roles are not clear.

Recommendations

DHS should revise optional licenses categories for emergency departments. Obtain legislation which:

- Will enable regulation of inter-facility transfer (hospital related) and inter-facility transport providers.
- Will encourage designation of other specialty centers (e.g., spinal cord, burns) provide authority for EMSA/LEMSA to actively participate in categorizing, emergency departments and verifying this categorization require that LEMSAs "approve" ambulance receiving hospitals.
- Require hospitals to provide LEMSAs with patient outcome data in a useful form to ensure sufficient specialty physician availability to emergency department patients.

Hospitals need to implement internal measures to ensure that emergency and critical care services are available when needed (on a day-to-day basis and during peak volume times).

A state agency should closely monitor hospital closures, mergers, and consolidation of services to determine whether health care resources are being compromised. Findings should be reported to the legislature and government executive branch officials.

SECTION F

COMMUNICATIONS

Status

California is blessed with a statewide “E-9-1-1" system and EMS communication networks across the state. For the most part, these communication networks permit communication to occur for the dispatch and transport of EMS patients and communication to the destination hospitals. The networks generally perform during major disasters. While some of the urban and metropolitan networks are extremely well defined, significant needs are still present in rural areas of the state.

Until recently, no formal assessment or planning guide existed within California to assist with development of a coordinated and comprehensive EMS communication system. The California EMS Authority recently completed a comprehensive needs assessment, prepared a resource inventory on the status of California's EMS communication resources and is near completion of the development of a 3rd statewide California State EMS Communications Plan.

Strengths

The current strengths of the statewide communication effort in California are as follows:

- Consistent high-quality statewide “E-9-1-1" system with a stable funding source.
- Standards for emergency medical dispatch have been established and are near adoption.
- The lead role of the California EMS authority has been identified in statute.
- There is common direct communication between providers (dispatch to ambulance, ambulance to ambulance, ambulance to hospital and hospital to hospital) communications statewide.
- A statewide needs assessment has been recently developed along with a published resource inventory of EMS communication resources statewide.
- A statewide communications plan that addresses many of the key needs identified in the needs assessment, has been drafted and is near completion.

The plan calls for a statewide coordination frequency for all EMS providers and identifies ongoing EMS communication assessments and a quality improvement process for monitoring EMS communication performance statewide. Funding for the statewide EMS communication network has been requested from the Governor's Office of Traffic Safety.

Statewide EMS Communications Assessment -Final Report. Northern California Emergency Medical Services, Inc. October 1998. EMS No. 7025. EMS Communications Resource Manual. Northern California Emergency Medical Services, Inc. October 1998. EMS No. 7025. 3 Statewide EMS Communications Plan. Northern California Emergency Medical Services Inc. July 1, .1999. EMS No. 8042.

Opportunities

Key conclusions of the Statewide EMS Communications Assessment were:

- A statewide EMS communications plan is needed.

- Statewide guidance and standards are needed in a multitude of areas relative to EMS communications including:

  - Statewide training standards for communications personnel.

  - Technical assistance to remove or mitigate barriers to quality EMS communications systems.

  - Assistance with funding sources.

  - Leadership and guidance on key needs not otherwise covered by the above (e.g. single mutual aid EMS frequency in the state).

  - Additional attention to the issues of wireless 9-1-1 communication.

- There is substantial support for the State EMS Authority to take on a significant leadership role on this subject.

  Areas desired for State EMS Authority coordination are to provide leadership and funding guidance, establish a template/plan for local EMS agencies, advocate on frequency coordination and to work with the FCC to establish one EMS communications frequency system on 800 MHZ, VHF or UHF.

  One other significant issue facing EMS and public safety providers in the state is the lack of interagency operability. Most providers lack the ability to communicate effectively with each other in the state. As a result, communication among EMS agencies, and public safety agencies can be severely restricted.

Recommendations

The recently completed needs assessment furthered the development of a draft Statewide EMS Communications Plan. The overall goal of the plan is to assure a high-quality EMS communication network in California and has the following:

- Adopt EMS communication standards (system design and performance) that link to nationally-accepted standards for EMS communication systems;
- Strive for state and local EMS communications systems to meet these nationally-accepted standards of functional performance;
- Strive for local EMS communications systems to be compatible with neighboring areas and within the state or in other geographical areas;
- Implement a statewide medical coordination channel;
- Develop emergency medical dispatch (EMD) standards as a core standard in all EMS dispatching centers;
- Make maximum use of state and other common resources, when this approach is appropriate and cost-effective;
- Promote the State EMS Authority as the lead liaison on state and regional communication issues,
- Provide uniform direction and standards for EMS communications, and
- Support technological and regulatory changes that improve the processing of wireless (cellular) calls to 9-1-1, including automatic number identification (ANI) and routing to the most appropriate PSAP.

SECTION G

PUBLIC INFORMATION AND EDUCATION

Current Status

California is rich in public information and education programs. Examples of active programs are: Crash Injury Research Engineering Network (CIREN); Safe Communities; Targeted Reduction Alcohol/Drug Crashes (TRAC); Anti-violence programs; Domestic Violence Counsels; Safe Kids' Coalition; Trauma Research and Education Foundation; Child Safety Seats, Every 15 Minutes; Accidents Aren't; Seat Belt collection; MADD; SADD; swimming pool fencing; motorcycle and bicycle helmet efforts; and designated Level I and II trauma center injury prevention programs.

Legally, California has primary, mandatory seat-belt, helmet and child-restraint laws. The DUI blood alcohol level in California is .08. There is a zero tolerance alcohol law for teenage drivers. There are giveaway programs for bicycle helmets, infant car seats and gun trigger locks. The range of involvement by local EMS agencies in these and other public information/education programs varies widely. Local EMS agencies need to be more actively involved in collaboration with existing information, education and prevention programs.

- There is no legislative authority for EMSA or LEMSAs to carry out prevention, public information, or education (PIE) activities.
- Division 2.5 HSC contains one reference to PIE (1799.205) related to EMS for Children programs.
- There are four PIE standards and four recommended guidelines in the EMS Systems Standards and Guidelines, to which each LEMSA must respond to in their EMS Plan document.
- The majority of grant funding for these activities is from the State Office of Traffic Safety (OTS), although the EMSA does fund a few prevention projects.
- These programs are not an active component of most systems due to the lack of funding.

Strengths

- PIE is becoming recognized as an important component of EMS.
- Many EMS systems are implementing data systems that will yield information than can be used to develop strategies for education and prevention.
- The EMS Vision Process, now underway, includes prevention as one of seven work groups.
- EMS providers, and the medical profession, are generally respected by the public as a source of information.
- EMS providers would be useful for their in-the-field perspective to participate in some specific prevention needs, such as child car safety seat awareness programs, importance of seat belt use, and anti-drunk driving campaigns.
- EMS providers could be resources or liaisons to Health Departments and other programs that are doing the broader work of prevention.

- Prevention programs are increasingly collaborative and more often share funding streams, since many health issues have common causal factors and/or are co-morbid (e.g. drug abuse, violence, intentional and unintentional injuries, mental health). EMS providers would have little connectivity to these other prevention programs, especially those that are often school-based or community-based, unless required by contract or the LEMSA.

- LEMSA agency staff, with funding, could become fully active participants in community prevention coalitions and programs.

Opportunities for Improvement

- There are some EMS-specific needs for public information and education not usually addressed in other community education programs such as 9-1-1 education, lay person AED programs, ED appropriate use, and to some degree, community first aid and CPR (although these are well publicized by the American Red Cross and other organizations).

- PIE projects have been funded through grants, with no guarantee of continued impact once the grant runs out.

- There are many PIE programs/curricula available for local use, but there is no standard, statewide program.

- County-based EMS agencies are better linked into health departments than regional agencies and have better access to needs assessments and other resources on injury prevention and related community health needs.

- The public relations portion of PIE is often limited to disaster activities. Often the only EMS community education that occurs is during EMS week.

- Trauma center designation contracts require a public information and education program.

- EMS providers do not currently have knowledge of the entire spectrum of PIE program prevention, its modes and methods. In contrast, most prevention experts work using a multi-faceted model which addresses health policy and public policy, community norms, individual behavior change, skill development, professional and community training, PIE and other domains.

- The appropriate role of EMS providers or LEMSA staff in PIE and prevention needs to be defined.

- Data base development, benchmarks, etc. and prevention program research will need to be developed as prevention in EMS evolves.

Recommendations

- Obtain funding to promote prevention as a highly desirable EMS activity so that LEMSAs will begin prevention programs.

- EMSA should act a clearing house for prevention programs in which LEMSAs can participate.

- Develop public information standards Statewide.

- Link and coordinate the existing PIO prevention program, such as DHS, CalOSHA, DSHA and Domestic Violence Council, Safe cities.

SECTION H

MEDICAL DIRECTION

Status

California law requires that the position of EMS Authority is a physician, with experience in emergency medicine. The State EMS Authority is currently not a physician. Historically, it has been difficult to recruit and retain a physician in this position. Salary level and political party affiliation are issues in the appointment. Richard Watson, the current interim EMS Authority, has facilitated and improved relationships between the State and local EMS agencies. Mr. Watson is commended for his efforts.

Local EMS Agencies in California are required to have Local EMS Agency medical directors. Time and commitment on the part of Local EMS Agency medical directors vary. Each Base Hospital in California is required to have a base hospital medical director. Some provider agencies, although not required by law, have chosen to employ provider agency medical directors. This produces a bit of a "wild card" medical director. Provider agency medical directors occur in both private ambulance services and fire agencies. Through committee structure, Local EMS Agencies coordinate medical policy review and implementation.

Local EMS Agency medical directors have a statewide association, the Emergency Medical Directors Association of California (EMDAC). This association has a contract with the State EMS Authority, in the absence of an EMS Authority physician, to provide medical oversight of State policy and paramedic license discipline. EMDAC has a scope of practice committee. The scope of practice committee advises the State EMS Authority and the State Commission.

Local EMS Agencies produce medical EMS policies and are responsible for local scope of practice. Policy and scope of practice vary throughout California. It is difficult for issues such as evidenced-based trial studies, scope of practice and pharmacological issues to be resolved statewide.

Strengths

Medical direction through proactive policy development, retroactive evaluation and quality improvement does exist in California.

The major strength of California medical direction is that at a local county level, medical directors effectively work together on local EMS agency medical policies. California medical directors, for the most part, are practicing, emergency physicians. This provides for an excellent pool of current, practical emergency medicine knowledge, which is reflected in California local EMS policy. There exists a strong bond between Local EMS Agency medical directors and Local EMS Agency administrators. A reason for this close relationship is understanding and contracting.

As stated above, the strengths are:

- Medical direction is at a local level and physicians actively participate.
- Medical direction is provided by practicing, experienced, emergency department physicians.
- A strong relationship exists between Local EMS Agency medical directors and Local EMS Agency administrators.
- Timeliness and responsiveness to local EMS medical policy needs.

Opportunities for Improvement

California EMS systems can benefit from standardized medical direction. The Vision 2000 process has been a catalyst for increased involvement of EMS medical directors. Medical directors and administrators continue to work on scope of practice issues; however, to date, this issue remains unresolved. Research needs to be a driving force in statewide EMS scope of practice. The subjective nature of decision-making needs to be reduced, and the use of data/information should be evaluated prior to setting standards. The time availability of local EMS agency medical directors varies widely. A state standard needs to be established.

Recommendations

- The issue of lack of recruitment and retention of the State EMS Authority physician needs to be solved. The issue of salary and political appointment needs to be reconciled.
- The law that requires the EMS Authority to be a physician needs to be changed to allow for an administrator and a full time emergency physician. The physician should have authority over medical issues. Both the administrator and the physician should share in the running of the State EMS Authority.
- Standards should be established for local EMS medical directors. This should include qualifications and hours of employment.
- A statewide scope of practice should be established for paramedics.
- EMS research should be funded annually.
- Job descriptions for local EMS agency medical directors should be established and a statewide standard should be in State regulation.

SECTION I

TRAUMA SYSTEMS

In 1983, California passed enabling legislation for the development and implementation of trauma care. Regulations governing regional trauma systems were enacted in 1986. Regional trauma systems implemented by Local Emergency Medical Services Agencies (LEMSA) are permissive in California; however, LEMSA's electing to implement such a system shall follow Regulations, at a minimum. Regulations have been revised and are currently awaiting approval by the California Office of Administrative Law. The revised Regulations are based in general on ACS-COT standards.

Status

There are 32 LEMSA's in California. Fifteen LEMSA's have submitted their Trauma Plan to the California EMS Authority and are awaiting approval. The approved Trauma Plans represent 89% of the State's population. All major metropolitan areas have trauma systems in place. Trauma systems are also in place in many less populated areas. Generally, the remaining LEMSA's without regionalized systems of trauma care tend to be more rural or areas where healthcare resources remain scarce. (See attached Table 2 for specific LEMSA system information.) Most systems use the ASC-COT for verification or consultation visits; in only one LEMSA is ACS verification a condition of designation. All designations are done by LEMSA County board of Supervisors or by a regional authority through a joint powers agreement.

Triage criteria is generally based upon physiological and anatomical assessments and mechanism of injury. A small number of systems use trauma scoring and Glascow coma scale for triage. One uses the ACS triage criteria.

Various methods of data collection and trauma registries are used. The LEMSA's trauma systems are integrated into the EMS system. Air and ground transportation exist. Intercounty agreements between LEMSA's permit critically injured patients to be transported to trauma centers in adjoining counties when necessary.

Strengths:

The California trauma system operates under State Regulations defining basic and minimum standards and requirements and allow LEMSA's to focus development and implementation based upon needs, resources, and political will of local areas. Trauma systems implemented by LEMSA's also allow for management remains critical in remaining support of trauma systems, particularly since all funding comes from the local level. There is no State funding for trauma systems.

Opportunities for Improvement

- Implementation of trauma care systems in uncovered.
- Standardized trauma registry information.
- Standardized triage.

Recommendation

While continuing to work through LEMSA's the State should standardize the Trauma Registry, triage tools, definitions so that we can, as a State, impact prevention, funding, standards, etc.

SECTION J

EVALUATION

Status

State Authority - Current legislation authorizes the state lead agency (SEMSA) to assess each EMS area or the system's service area for the purpose of determining the effectiveness of emergency medical services (H. & S. Code 1797.102). In 1993, SEMSA (which generally utilizes multi-disciplinary committees or local EMS agencies [LEMSA] via special projects) developed planning and implementation guidelines for EMS systems, including a data collection/system evaluation section (H. & S. Code 1797.103 and EMSA # 101). State regulations require EMT-IIs and paramedics to complete a patient care record with specific data elements, and in the late 1980's, SEMSA developed a uniform data set for use by local EMS agencies (LEMSAs). The latter is about 75-80% congruent with NHTSA standards. SEMSA funded numerous computerized data system special projects and with EMSAAC and other organizations, conducted conferences dedicated to improving data collection and use. SEMSA currently requires submission of data summaries from LEMSAs utilizing computerized data systems. SEMSA also funded development of a statewide Continuous Quality Improvement (CQI) program and produced a manual. More recently, the Statewide Vision process included data and quality improvement components, which have since been consolidated into the System Review and Data work group. Two statewide special projects are currently being funded by SEMSA (e.g., Mt Valley EMS and S-SV EMS) to develop uniform quality indicators and to revise the EMS system guidelines and standards. SEMSA has also has applied for an Office of Traffic Safety grant to standardize data collection. Two laws provide limited confidentiality protection (Evidence Code 1040 and 1157.7) for government and trauma quality review activities.

Local Authority (LEMSA) – Each of the 32 LEMSAs is required to evaluate the EMS system (H. & S. Code 1797.204) and submit an EMS plan which addresses data collection/system evaluation. The LEMSA is required to establish a system-wide Continuous Quality Improvement (CQI) program and **each service provider and base hospital** is required to have a LEMSA approved CQI policy.

Strengths

The State of California is too large and diverse for a single lead agency to fulfill the federal evaluation standard without local assistance. The legislated partnership between SEMSA/Commission and the LEMSA, which is unique in the country, provides an effective balance of centralized leadership and local oversight responsibility for data collection and system evaluation. Whether the LEMSA functions at the county or regional level, it carries out state standards and locally manages the out-of-hospital quality improvement program and patient care evaluation. It is in the best position to recognize EMS system problems, improve localized system trends and impartially mediate inter-organizational conflicts. This state/local model allows similar evaluation and data management standards to be flexibly applied throughout California.

Opportunities for Improvement

C California has no comprehensive statewide plan for system evaluation, quality improvement or data utilization. California's evaluation and data management systems have emphasized the LALS/ALS level and paid little attention to medical dispatch, first response, EMT, emergency department or the hospital components. While some LEMSAs have excellent programs, others are at the early stages of development. Several LEMSAs do not have computerized data collection systems at all and numerous different computerized data programs have been developed in California. Only a few LEMSAs currently submit data to the State and comprehensive compilation or analysis of EMS system information is not possible. The current state data report, even if it was complete, has little value. With a few exceptions at the local

level, data linkages do not exist between dispatch, first responder, EMS, the emergency department, the hospital or the coroner. No centralized data integration occurs between the California Highway Patrol, the Fire Marshal, EMS, OSHPD or county mortality, injury and illness statistics.

Pre-established standards, criteria and outcome parameters to evaluate resource utilization, scope of services, effectiveness of policies and procedures do not exist, and at the state level, there is no clear continuum between CQI, remediation, focused CE and formal certificate review for individual patient care practitioners. Disclosure protection does not extend to dispatchers, first responders, EMTs, paramedics or out-of-hospital providers to allow confidential patient care review. The inherent difficulty in conducting quality EMS research coupled with the overall lack of research funding and uniform research criteria (or consent rules) have resulted in a paucity of published research studies.

Recommendations

- Fund and continue to support the California Vision Project (which already addresses many of these needs) to develop integrated statewide EMS system evaluation, quality improvement and data standards.

- Develop a state EMS plan, including the Evaluation/Data section.

- Support increased SEMSA/Commission leadership which utilizes an integrated multi-disciplinary process, including the System Review and Data Work Group (Vision Process), the Statewide EMS Evaluation project (Mt. Valley EMS) and the Statewide EMS Evaluation and Planning project (S-SV EMS).

- Support and utilize, if funded, the SEMSA Office of Traffic Safety grant to revamp the statewide data system, including: revision of the statewide required data set; development of functional statewide reports; and development of linkages (e.g., medical dispatch, first response, SWITERS, EMS, ED, hospital, OSHPD) .

- Utilize national patient care clinical evaluation models whenever possible (e.g., TRISS, cardiac, neurological outcome) to enhance external, objective EMS system evaluation.

- Integrate state developed evaluation, CQI, disciplinary and data standards to identify EMS system improvement opportunities, enhance the EMS decision making process and reduce preventable death and disability.

- Utilize EMDAC to promote development of uniform, core BLS and ALS treatment protocols and associated patient care review standards.

- Develop criteria to enhance EMS research (clinical and descriptive), fund and promote development of high quality, multi-agency EMS research projects and develop uniform patient consent standards.

- Modify EMT- I, EMT-II and paramedic regulations to include the role of research and evidence-based medicine in the EMS system improvement process.

- Promote and support legislation and regulations that expand confidentiality protection (to dispatchers, EMTs, paramedics and providers) and require participation by providers, hospitals and EMS agencies in the established statewide evaluation, quality improvement and data systems.

- Establish ongoing feedback and monitoring standards, including dissemination of data and evaluation findings, to promote continuous EMS system improvement.

SECTION K

EMERGENCY MEDICAL SERVICES FOR CHILDREN (EMSC)

Current Status

Sixteen LEMSAs have implemented some, or all, of the EMSC components identified in the California EMSC model. These programs include the following:

- Standards for hospital emergency departments (equipment, personnel, other resources).
- Designation of pediatric critical care centers.
- Training for pre-hospital personnel.
- Ambulance equipment and supplies.
- Treatment protocols.
- Inter-facility consultation and transfer guidelines.

Strengths

- In 1996, Division 2.5 of the Health and Safety Code was amended to include sections 1799.202-207 regarding EMSC.
- This legislation set up funding at State EMS Authority (EMSA) for personnel to develop and implement EMSC programs state-wide.
- EMSC Technical Advisory Committee established and meeting regularly.
- EMSC will be holding second annual conference in September 1999.
- EMSA Publication #196 “EMSC Project” (1994) has been published and distributed state-wide.
- Most EMS Systems have received state grant money to establish local EMSC systems according to EMSA standards.
- New trauma regulations have clarified specific criteria for pediatric trauma care for all trauma centers.

Opportunities for Improvement

- EMSC is receiving nation-wide support, so opportunities may be available for additional funding for EMSC programs.
- Training programs for prehospital care providers have been established, but not yet implemented.
- On-going funding for EMSC programs is not available.
- Without dedicated EMSC funding and so many other mandates and programs vying for attention, EMSC could get lost in the shuffle.
- EMSC systems are optional for local EMS Agencies (LEMSAs).
- The California EMSC legislation funds ongoing EMSC staff at EMSA but doesn’t make any ongoing funding available to LEMSAs.

- Once EMSC grant funding runs out, there are no state or local resources to continue local EMSC programs.

- Initial prehospital care education in pediatrics is limited.

Recommendations

- Fund EMSC programs at the local level.
- Improve pediatric pre-hospital personnel training.
- Develop regulations regarding EMSC to accompany the recent legislation.

SECTION L

CALIFORNIA DISASTER PREPAREDNESS AND RESPONSE

Current Status

Legislative Authority

California Emergency Services Act
State of California Emergency Plan
California Disaster and Civil Defense Master Mutual Aid Agreement
Health and Safety Code Division 2.6 Section 1797.160,1797.151 and 1797.152 (a)(b)(c)
California Code of Regulations, Title 19, Division 2, Chapter 1. Standardized Emergency Management System
Health and Safety Code Division 107, Sections 13000-130025 and 130050-130070

Standardized Emergency Management System

California has adopted the Standardized Emergency Management System (SEMS). Utilization of this system is required by the California Government Code Section 8607 (a) for managing response to multi-agency and multi-jurisdiction emergencies in California. SEMS incorporates the use of the Incident Command System, the Master Mutual Aid Agreement, existing mutual aid systems, the Operational Area concept and multi-agency or inter-agency cooperation.

Mutual Aid Regions

California is divided into six geographical mutual aid regions that have been defined by the Governor's Office of Emergency Services. Each county is assigned to a Mutual Aid Region. Each county is referred to as an Operational Area. For the medical and health component of disaster response, each Region has a designated Regional Disaster Medical/Health Coordinator who is either a local Health Officer, a Director of Emergency Medical Services or a county emergency coordinator. In turn, each county has an Operational Area Disaster Medical Health Coordinator.

In most areas, this system is efficient and works well. However, in areas where a single local EMS agency is contracted to provide EMS direction for several counties, the EMS agency may not be well integrated into the emergency response plan for each county, causing confusion in handling the medical and health aspects of a disaster.

The Master Mutual Aid Agreement requires counties to provide mutual aid to impacted counties at no cost. This presents monumental problems when providing medical and health resources because almost all of the resources involving hospital beds, medical personnel and ambulances are part of the private sector. The counties comprising Region I and Region VI have signed an inter-county agreement that delineates payment for resources.

Disaster-Response Management

In the event of a major disaster which results in a proclamation of emergency by the Governor, and in the need to deliver medical or public and environmental health mutual aid to an affected area, the Emergency Medical Services Authority, the State Department of Health Services and the Governor's Office of Emergency Services coordinate the mutual aid response through the Regional Disaster Medical/Health Coordinators.

Disaster Medical Assistance Teams (DMATS)

There are four Level I and three Level II Disaster Medical Assistance Teams in California. These volunteer teams are staffed and equipped to provide austere medical care in a disaster area or medical services at transfer points and reception sites associated with patient evacuation. They may be mobilized locally, by the State or by the National Disaster Medical System (NDMS).

Western National Medical Response Team (NMRT)

There are four volunteer National Medical Response Teams which have been designated by the National DISASTER Medical System to respond to nuclear, biological or chemical disasters. The Western NMRT is comprised of specially trained DMAT members from CAA and CA-9 which are in San Bernardino and Los Angeles Counties respectively.

Metropolitan Medical Response System

In light of heightened concerns that the United States may be a target for acts of terrorism involving weapons of mass destruction, the Federal government has provided funding for the development of local Metropolitan Medical Response Systems. Los Angeles County, Long Beach, San Diego and San Francisco are in various stages of developing their respective systems.

Hospital System

There are 4,500+ licensed acute care hospitals in California. All health facilities have been encouraged to adopt the Hospital Emergency Incident Command System (HEICS) for responding to disasters.

HSC 130065 requires hospitals to meet specific seismic safety standards by 2030. It is anticipated that many of these facilities will not be able to meet these requirements and will ultimately close causing a significant reduction in available beds.

Communication System

The State has implemented a RIMS computer program to move consistent and uniform data during a disaster. A satellite system known as OASIS provides voice communication for government. A HAM radio system is in place. Some areas, such as Los Angeles and Orange County, have sophisticated computerized communications systems that are utilized daily and during disasters to communicate between health facilities and government, Stable communication systems which do not rely on telephone lines are either non-existent or exist to a lesser degree in health facilities of other counties.

Opportunities for Improvement

Disaster communication systems between health facilities and governmental authorities needs to be strengthened. Disaster planning and response authority and responsibilities needs to be delineated. This is particularly true for local EMS agencies who provide services to multiple counties, but are not well integrated into the individual counties' disaster response plans.

The Master Mutual Aid Agreement requires counties to provide resources at no cost to the requesting county. While this system may be workable for assets owned by the County, it is impractical when the county relies on private sector resources that expect payment for services. It is unreasonable for a county providing resources to an impacted county to absorb the cost of providing mutual aid.

Recommendations

- Develop statewide, mutual aid plan for movement of ambulance resources.

- Funding is needed to establish a uniform disaster communication system. Legislation may be needed to more clearly define the role and responsibilities of local EMS agencies in a disaster. Legislation may be needed to ensure that a county providing resources to another county is able to recoup costs of providing the resources.